

**ATTORNEY DOCKET NO. 05015.0365U1  
PATENT****IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of:

**IRICK, JR. ET AL**Serial No.: **09/662,965**Art Unit: **1712**Filed: **SEPTEMBER 15, 2000**Examiner: **SHORT, P.**Title: **"METHODS FOR SLOWING THE  
DEGRADATION RATE OF  
BIODEGRADABLE POLYMER  
COMPOSITIONS AND COMPOSITIONS  
THEREOF"**Confirmation No.: **3021****DECLARATION UNDER 37 C.F.R. § 1.132**VIA FACSIMILE (703) 872-9311  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
ATTN: Examiner P. ShortNEEDLE & ROSENBERG, P.C.  
Customer No. 23859

Sir:

I, Gether Irick, Jr. a citizen of the United States of America, residing at 113 South Patrick Drive, Gray, TN 37615, declare that:

1. I am a co-inventor of the above-identified application and I have read and am well-acquainted with the subject matter thereof.
2. I obtained a B.S. degree in Chemistry and Mathematics from Eastern Kentucky State College in 1957, and a PhD in Organic Chemistry from the University of Louisville in 1960.

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3. I have been employed by Eastman Chemical Company, the Assignee of this patent application, since 1960. I am currently employed as a part-time Research Scientist in the field of polymer stabilization and degradation, and have been so for 7 years.

4. I have been associated with the research and development of polymer stabilizers and stabilized formulations for 35 years, from 1968 to the present.

5. Claim 1, and those claims dependent thereon, of my application presently recite, in pertinent part, a method for preparing an article from a biodegradable polymer composition, wherein the article comprises "a film, a bottle, a blow molded article, an injection molded article or a container." Claim 22 of my application, and those claims dependent thereon, recite, in pertinent part, a composition for making "an article comprising a film, a bottle, a blow molded article, an injection molded article or a container."

6. I have read and understand the reference currently being applied against my claims reciting aliphatic-aromatic copolyesters, namely, U.S. Patent Nos. 5,750,605 ("Blumenthal *et al.*"). In particular, I understand that claims 1 and 22, and those claims dependent thereon, have been rejected under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over Blumenthal *et al.* In particular, I understand that the Office Action contends that the sulfonated polyester of Blumenthal *et al.* is "substantially the same" as the articles and methods claimed in my application.

7. Blumenthal *et al.* disclose hot melt adhesives made from sulfonated polyesters. As set forth in this reference, sulfonated polyesters confer water solubility or water sensitivity to polyester materials, such as the hot melt adhesives of Blumenthal *et al.* In col. 5, line 21, Blumenthal *et al.* states that "[t]he use of sulfonated polyester confers the additional advantage of providing a degree of water sensitivity...." Further, the reference is directed toward obtaining hot melt adhesives that have such properties. For example, in col. 1, line 14, Blumenthal *et al.* states that "[f]or various applications, it

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is also desired that some hot melt adhesives be hydrophilic, *i.e.*, be water-soluble, water-sensitive or water activated." Additionally, Blumenthal *et al.* states in col. 1, line 42 that "[t]he present invention stems from the growing need for hydrophilic materials...." Thus, one of ordinary skill in the art, such as myself, would understand from Blumenthal *et al.* that it would be desirable to obtain water solubility or sensitivity and that such properties could be imparted through the inclusion of sulfonated groups in a polyester or copolyester material.

8. Further, it is well known in the art that sulfonation imparts water solubility or dispersibility. For example, Kirk-Othmer Encyclopedia 4<sup>th</sup> Ed, V23, Wiley, NY (1997), p.169 (attached hereto as Exhibit A) teaches concerning the incorporation of a sulfonic acid group into polymeric materials: "...the sulfonic acid group strongly interacts with water to bring about polymer swelling or gel formation...". Additionally, Ullmann's Encyclopedia of Industrial Chemistry, 6<sup>th</sup> Ed, V36, Wiley-VCH, Weinheim, p. 25 (attached hereto as Exhibit B) teaches that "[p]olyester sizing agents are, in general polycondensates of aromatic dicarboxylic acids with glycols...and sulfonated aromatic dicarboxylic acids...which provides solubility or dispersibility in water...." Exhibit B further teaches that "[t]he aim is to produce products that disperse readily in water...."

9. The compositions of my invention and the articles made therefrom are biodegradable polymers, which are also referred to as "biodegradable plastics." Kirk-Othmer Encyclopedia, 4<sup>th</sup> Ed, V19, (1997) p970 (attached hereto as Exhibit C) defines biodegradable plastic as "...a degradable plastic in which the degradation results from the action of naturally occurring microorganisms such as bacteria, fungi, and algae."

10. Moreover, water solubility or water sensitivity in a polymeric material is not synonymous with biodegradability. For example, as explained in U.S. Patent No. 6,514,602, (attached as Exhibit D hereto) a biodegradable polymer can be water insoluble.

11. The aliphatic-aromatic copolyesters recited in the claims of my invention are *water insoluble*, biodegradable polymers. These materials will not swell or gel in water as will the copolyester

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materials of Blumenthal *et al.* Thus, from the disclosure of Blumenthal *et al.*, as well as Exhibits A and B, it is readily apparent that sulfonated polyesters and copolyesters will have properties which are significantly different from the properties of the polymers of this invention which do not contain groups which impart such properties to the polymeric composition.

12. Further, inclusion of sulfonation in the copolyesters that are used in the compositions of my invention would change the basic and novel characteristics of my invention because such compositions would then be sensitive to or soluble in water. Such water sensitivity or solubility would be undesirable because articles prepared from such compositions would begin to swell or dissolve in use. If this happens, the articles would lose structural integrity and consequentially would break or collapse during use thus making the article unsuitable for their intended uses as biodegradable polymer articles.

13. I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine, imprisonment, or both, under U.S.C. Title 18, § 1001, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

DATED: August 7, 2003

Gether Irick, Jr.  
GETHER IRICK, JR.

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NEEDLE &amp; ROSENBERG

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Application No. 09/662,965	Application No.	Serial No.	IDON Customer No.
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